THE THEORY OF DISTRIBUTION.[1]

DISTRIBUTION is the species of Exchange by which prod-
uce is divided between the parties who have contributed
to its production.[2] Exchange being divided according as
both, or one only, or neither of the parties have competi-
tors, Distribution is similarly divided. The case in which
both parties have competitors will here be first and prin-
cipally considered.

The simplest type of this distributive exchange would
be of a kind which is effected once for all, without ref-
ence to a series of future productions and exchanges.
For example, to adapt an illustration used by Mr. Henry
George,[3] let it be supposed that on a particular occasion

[1] The substance of some lectures which formed part of a course "On the
Uses of Deductive Reasoning in Social Science," delivered at Harvard Uni-
versity in the autumn of 1902.

[2] This definition, if not made more specific, includes some kinds of Inter-
national Trade, just as the generic definition of International Trade includes
some kinds of Distribution. See *Economic Journal*, vol. iv. p. 34 and p. 49.

[3] *Progress and Poverty*, Book I. chap. iii.

each out of a number of white men hires one or more black men to assist in catching seals, on the agreement that each white man shall give his black assistants a certain proportion of the take, the terms having been settled in an open market in which any one white is free to bid against any other white and any one black against any other blacks. A conception more appropriate to existing industry is that each white agrees to pay in exchange for a certain amount of service a definite quantity of produce, not in general limited to the result of a particular operation. On a particular day less seal may be taken than the employer has agreed to give the employee for the day. In this case, even if payment is not made till the end of the day, the employer must pay for help on a particular day in part with seal caught on a previous day. He must pay altogether out of past accumulations when payment is made before the work is done. When the employer agrees to pay a definite amount, he cannot expect to gain on each day's transaction, but on an average of days.

This example is suited to illustrate some general properties of Exchange which attach to Distribution as a species of Exchange. Such are the laws which connect a change in the supply or demand upon one side of the market with a change in the advantage resulting from the transaction to the parties on either side. Thus, competition on both sides being presupposed, a decrease of supply in a technical sense of the term on the one side is, *ceteris paribus*, universally attended with detriment to the other side, but is not universally attended with detriment to the side on which the supply is decreased.[1] Accordingly, a limitation of supply on one side may be advantageous to that side, though not to both sides. The case of Distribution compared with Exchange in general

[1] See *Economic Journal*, vol. iv. p. 40.

in respect to such limitation of supply has only this pe-
culiarity,—that the danger of this policy defeating itself
is in the case of Distribution specially visible and threat-
ening. There is an evident limit to what the black man
dealing with the white man can get in exchange for a cer-
tain amount of his service; namely, the total product which
that service utilized by the white man will on an average
produce. To be sure, there is here but a case of the gen-
eral principle that no one will give more for a thing, whether
article of consumption or factor of production, than the
equivalent of its total utility to him, which total dimin-
ishes as the quantity of the commodity is reduced. But
this limit is less liable to escape attention when it is fixed
by the material conditions of production rather than by
the desires of consumers. Conspicuous warning is given
to parties in the position of our black men not to attempt
to benefit themselves by a considerable reduction in their
supply of service; for, though they might possibly obtain
a larger proportion, they would probably obtain a smaller
portion, of the average product. The laws which have
been stated and other general laws of Exchange are equally
true in more complicated cases of Distribution.

So far, we have supposed only a single factor—the
service of the black man, or, more generally, the factor
β—offered by the competitors B_1, B_2', etc., in exchange
for some of the produce a offered by the competitors
A_1, A_2, etc. Let us now introduce other kinds of factors,
γ, δ, etc. And let us no longer suppose payment to
be made by parties of the type A, in the kind of commod-
ity which is produced, namely, a. A more concrete con-
ception is that, besides the group A, B, C, D, there is
another and another group,—A', B', C', D'; A'', B'', C'',
D'';—where each capital letter typifies a set of com-
peting individuals. It may be supposed that each A
purchases out of the finished product that he turns out—

namely, a—portions of the products a', a'', etc., which
he distributes according to the law of supply and demand
among parties of the type B, C, D. In fine, each A may
pay for the factors of production altogether in some
one product, a''',—"*numéraire*," as happily conceived by
M. Walras, or, less generally, money,—which the pur-
veyors of the factors can exchange for the articles which
they want. These articles need not be all commodities
ready for consumption: some of the parties may care to
purchase factors of production wherewith to play the
rôle which has been assigned to A.

Having now obtained a general idea of the machinery
by which distribution in a régime of competition is effected,
let us go on to consider in more detail the parts of the
mechanism. And, first, of the party that takes factors
of production in exchange for products or the means of
purchasing the same, the party above represented by
the white man and labelled A. The functions of this
party may be investigated by an ancient method which
Sidgwick has proposed to rehabilitate[1] for the purposes
of modern economics,—the search for a definition. What
is an entrepreneur? Amid the diversified combinations
of attributes which the industrial world presents—in-
numerable as the varieties in which vegetable nature riots
—we ought to fix certain characters agreeably to the
rule laid down by Mill under the head of Definition by
Type. "Our conception of the class" should be "the
image in our minds which is that of a specimen complete
in all the characteristics."[2] *Four* such type-specimens
may be distinguished, ranged in a descending order ac-
cording to the extent of functions ascribed to the entre-
preneur. There is, *first*, the party whom the classical
writers designate as the Capitalist, "who from funds in

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[1] *Political Economy*, Book I. chap. ii. § 1.

[2] *Logic*, Book III. chap. vii.

his possession pays the wages of the laborers, or supports them during the work; who supplies the requisite buildings, materials, and tools, or machinery; and to whom, by the usual terms of the contract, the produce belongs to be disposed of at his pleasure." [1] This party will here be considered as devoting his care and savings to a single business. There is, *second*, the entrepreneur as portrayed by the late President Walker, "not an employer because he is a capitalist, or in proportion as he is a capitalist." [2] There is, *third*, the party to whom Mr. Hawley would wish to restrict the term "entrepreneur," [3] the man who undertakes risks, of which class the most prominent, though not the only, species is the investor in joint stock companies.[4] *Fourth*, at the extreme degree of tenuity, is the entrepreneur who makes no profit. It might seem, indeed, as if this class did not call for special treatment, as differing only in the amount, not in the kind of remuneration. A fig-tree which bears no fruit is not therefore a tree of a distinct species. The horse which the Scotchman its owner had just trained to live upon a minimum, when the animal unfortunately died, was not therefore a new variety of the equine genus, requiring mention in a treatise on Natural History. However, as imposing theories have been connected with this last category, it comes within the scope of the present inquiry.

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[1] Mill, *Political Economy*, Book II. chap. xv. § 1.

[2] *The Wages Question*, p. 228.

[3] *Quarterly Journal of Economics*, vol. vi. (1892) p. 283; vii. p. 459 *et seq.*; xv. p. 77 *et seq.*

[4] Compare Mangoldt, *Unternehmergewinn*, pp. 41-43. A person who does not work, "wie der stille Gesellschafter, hört darum nicht auf, wahrer Unternehmer zu sein." This type is the limiting case, short of which the trouble of management in various degrees is combined with what Mr. Hawley calls "the irksomeness of risk." As Professor Taussig says, "The corporation of modern times presents all possible varieties of the relation between active manager and idle investor. Nominally, the stockholders are a group of associated active capitalists. Practically, they range from shrewd managers to the most helpless of inactive investors." *Quarterly Journal of Economics*, vol. x. (1895) p. 83. *Cp.* Marshall, *Principles of Economics*, Book IV. chap. xii.

As our aim in comparing definitions should be, as Sidgwick says, "far less to decide which we ought to adopt than to apprehend the grounds on which each has commended itself to reflective minds,"—the hunt for a definition being followed not so much for the sake of the quarry as of the views which are incidentally presented,—let us go on to consider the principal propositions which the several conceptions are adapted to bring under our notice. In this inquiry much assistance will be obtained from a series of articles on cognate subjects in the *Quarterly Journal of Economics*,[1] which forms a sort of economic symposium.

The *first* definition is particularly suited to inquiries in which the parties who are in the habit of saving are contrasted as to their actions and interests with the parties who do not save,—approximately, the working classes. Specimens of such inquiry may be found in the fifth chapter of Mill's first book, and in Professor Taussig's important article on "The Employer's Place in Distribution."[2] It sounds paradoxical to add that the classical conception is not particularly adapted to illustrate the Ricardian theory of rent. But the definition of the capitalist above given is not easily reconciled with the received representation, that the capitalist's remuneration is equal to the number of doses which he lays out, multiplied by the remuneration of the last dose, the ordinary rate of profit. For, as Sidgwick argues, there is no adequate reason for expecting that "remuneration for management" as well as interest should tend to be at the same rate for capitals of different sizes.[3] Doubtless, the proposition is accurate enough to support the practical consequences which have been deduced from it. But, while fully admitting this, one may still agree with Sidgwick that "even Mill's ex-

[1] References to the series up to November, 1900, are given in the *Quarterly Journal of Economics*, vol. xv. p. 75.

[2] *Quarterly Journal of Economics*, vol. x. p. 72.

[3] *Political Economy*, 3d edition, Book II. chap. ix. § 3.   *Cp.* chap. ii. § 8.

position" is "highly puzzling." For the idea of an eco-
nomic person laying out doses up to the margin and ob-
taining the remuneration equal to the number of doses
multiplied by the marginal productivity of each dose
is only proper to the case in which the doses are for sale.
But it is only in the conditions proper to our third defi-
nition that doses of capital are put on a market in exchange
for profit. Perhaps the classical writers, having an eye
to practice and not restricted by a sharp definition, often
tacitly introduce the supposition that it is open to the
"capitalist" to take part in some other business besides
his own.[1]

The classical formula for surplus may be employed
along with our *second* definition if we use the phrase
"amount of outlay multiplied by average rate of return"
to designate the amount which the entrepreneur of the
Walker type pays in the way of interest from year to
year to those who have lent him the means of carrying on
his business. The surplus, according to this conception,
will include not only the landlord's rent, but also the en-
trepreneur's net income. The portion of this surplus which
accrues to the entrepreneur is not given by any simple
formula. The conditions by which it is determined may
be considered under two heads, corresponding to Cairnes's
categories,—commercial and industrial competition. This
distinction becomes clearest when, in conformity with
the division of employments, we conceive different occu-
pations to be separated by great gulfs, so that they who
would pass from one to the other must make a complete,
or at least a considerable, change in their business arrange-
ments.[2] In virtue of the first kind of competition the

[1] *Cp.* Mill on various employments of capital, *Political Economy*, Book II.
chap. XV. § 1, par. 4.

[2] See note to the present writer's Address to the British Association, Sec-
tion **F**, 1889, which, written before the publication of Marshall's *Principles of
Economics*, does not sufficiently emphasize the "principle of continuity." It

entrepreneur endeavors to make the best possible arrangements within the occupation which he has chosen. In virtue of the second kind of competition he endeavors to choose the occupation which will afford to him the greatest net advantage.

His motive under the first head may be understood by likening him to a monopolist who does not control the prices of the factors of production, nor yet the price of the product, the latter being fixed by a maximum law, or, rather, the case being that in which the monopoly is just becoming extinct, as Cournot would say, by the introduction of competitors, so that this entrepreneur can no longer sensibly alter at will the price of the product. Under such circumstances each entrepreneur will vary all the variables under his control up to the margin at which his own advantage becomes greatest. If he or we be content with a rough estimate of this advantage, it may be measured by the difference between his incomings and outgoings. His incomings may be regarded as the product multiplied by the price thereof, the amount of the product depending in some definite manner on the amounts of the factors of production which are employed.[1] The outgoings may be regarded as a sum of terms, each of which is the amount of a factor of production multiplied

may be observed that the two kinds of competition involve respectively two mathematical operations, the determination of a maximum, and of the greatest among maxima. There is the distinction between finding the top of a hill and finding the highest hill-top. The demarcations between the two species of competition and between the two mathematical operations are not coincident, so far as an entrepreneur, without leaving his business, may introduce considerable and, so to speak, integral changes in its organization, in accordance with the "principle of substitution" (Marshall). This principle seems to cover both the species of competition and both the mathematical operations. Doubtless, it is convenient to have a term applicable to every method by which maximum advantage is sought. Among such methods ought, perhaps, to be placed the *calculus of variations*, where the "margin of profitableness" is considered as "a sort of boundary line, cutting one after another every possible line of business organization." *Principles of Economics*, Book VI. chap. vii. § 7, 4th edition.

[1] Some *function* of the amounts.

by its price.[1]   It follows[2] that in a state of equilibrium
the increment of value produced by the last increment
of a factor is just equal to its price.   "The *marginal* shep-
herd . . . adds to the total produce a net value just equal
to his own wages."[3]

[1] Or, rather, the *accumulated* price, in the sense explained by Professor
Marshall (*Principles of Economics*, Book V. chap. iv. § 2, p. 432, 4th edition):
"Looking backwards, we should sum up the net outlays, and add in accumu-
lated compound interest on each element of outlay."   Compare note xiv. of
his mathematical Appendix.   Abstraction was made of this sort of correction
in the British Association Address to which reference has been made.   For
instance, it was tacitly assumed that the entrepreneur might have as much
labor as he could pay for (at a prevailing rate of wages) at the time when the
value of the finished product was realized.   Professor Barone has pointed out
the need of greater accuracy and a means of obtaining it by employing his
remarkable conception of "capital of anticipation."   *Giornale degli Econo-
misti*, February, 1896.

[2] Marshall, *Principles of Economics*, Book VI. chap. i. § 8, 4th edition.
Mr. J. A. Hobson's criticism of this doctrine exemplifies the difficulty of
treating the more abstract parts of Political Economy without the appropri-
ate mathematical conceptions.   An elementary discipline in the differential
calculus would have corrected the following passage and its context: "In
order to measure the productivity of the last dose of labor, let us remove it.
The diminution of the total product may be 8 per cent.   This 8 per cent.,
according to Marshall's method, we ascribe to the last dose of labor.   If now,
restoring this dose of labor, we withdrew the last dose of capital, the reduc-
tion of the product might be 10 per cent.   This 10 per cent. is regarded as the
product of the last dose of capital.   Similarly, the withdrawal of the last
dose of land might seem to reduce the product by 10 per cent.   What would
be the effect of a simultaneous withdrawal of the last dose of each factor?
According to Marshall's method, clearly 28 per cent.   But is this correct?"
The Economics of Distribution, p. 146.   Quite correct, if in the spirit of the
differential calculus we understand by dose an increment as small as pos-
sible, not as large as the objector pleases.   He goes on: "Put the same experi-
ment upon its broadest footing, and the overlapping fallacy becomes obvious.
Take the labor, capital, and land as consisting of a single dose each; now
withdraw the dose of labor, and the whole service of capital and land disap-
pears.   Is the destruction of the whole product a right measure of the pro-
ductivity of the labor-dose alone?" (*loc. cit.*, p. 147.)   Imagine an analogous
application of the differential calculus in physics, "put upon its broadest
footing," an objector substituting x wherever a mathematician had used dx
or Δx !

[3] It being assumed that the function expressing the product in terms of
the factors of production is such that for the values of the variables with
which we are concerned the net income of the entrepreneur may be a maxi-
mum, let P be the amount of the product, π its price, a, b, c, amounts of
factors of production, p_1, p_2, p_3, etc., their respective prices—their actual
prices—for a first approximation, their *accumulated* prices for a more accu-
rate statement.   The net income of the entrepreneur may then be written
(abstraction being made of the entrepreneur's own effort) $P = \pi f (a, b, c) -
p_1a - p_2b - p_3c$.   In order that this expression may be a maximum, the law of
decreasing returns must hold in the *first* of the two senses elsewhere dis-
tinguished (*Economic Journal*, vol. ix. p. 293 and vol. vii. p. 46).   The condi-

So far supposing the entrepreneur's work to be a constant quantity. In a more exact estimate the quantity which the entrepreneur seeks to maximize is the utility to be derived from his net income *minus* the disutility incident to its production. From this consideration it follows that the increment of utility due to the increment of product which is produced by the last increment of entrepreneur's work is just balanced by the increment of disutility due to that work.

To this condition is superadded the tendency towards equal net advantages in different occupations, resulting, as Professor Marshall has shown, not so much in the equal advantageousness as in the equal attractiveness of different occupations. The remuneration of the entrepreneur thus corresponding to his services may be classed along with the remuneration of the workman as "earnings," from a certain point of view, which is doubtless proper to the publicist and philosopher. As Mangoldt points out, "the circumstance that certain services do or do not attain a market price" does not "essentially alter the measure of their compensation." But there is another point of view which is proper to those who study the mechanism of distribution. As Professor Taussig well observes, "The cobbler who works alone in his petty shop gets in the main a return for labor as much as the workman in the shoe factory"; but "with regard to the machinery by which distribution is accomplished he [the cobbler] belongs in a different class from the hired laborer." [1]

tion must still be postulated when account is taken of the entrepreneur's subjective feelings,—effort and sacrifice in the way of production balanced by satisfaction immediate or prospective in the way of consumption. Nor is the case essentially altered when account is taken of the possibility (noticed by Professor Pareto, *Cours*, Art. 718) that the factors are not independent. Suppose that the amount of labor must always be in proportion to, or on any definite function of, the amount of land. Then, eliminating one of these quantities, we may treat the other as independent.

[1] *Quarterly Journal of Economics*, vol. x. (1895) p. 88. Professor Taussig goes on, "For an understanding of the machinery by which distribution is accomplished in modern times, the classification of sources of income should

The tendency to equality of net advantages of course only exists with respect to positions between which there is industrial competition. Accordingly, if the union in one person of natural abilities and money constitutes him a member of a "non-competing group," there is no presumption that the remuneration of such an entrepreneur will be exactly equal to the interest which he might have obtained by lending his money plus the salary which a person of his ability could command as a hired manager. There exists an excess above that sum, corresponding to what Mangoldt calls *Unternehmergewinn*. There may be excesses somewhat similarly caused by different degrees of ability and resources; the various "rents" enumerated by Mangoldt, which, as he observes, tend to diminish with the progress of society, so far as education becomes more diffused and it becomes easier for persons properly qualified to obtain the use of capital.

Some additional light on the functions of the entrepreneur may be obtained by comparing the profits in businesses of a different size. Suppose (for the sake of the argument) that the work and worry of the "boss" do not increase[1] with the scale of operations, how is the equality of net advantages which theory leads us to expect brought about? *Ceteris paribus*, might we not expect the entrepreneur's residue to be larger in the large industries?[2] The answer seems to be that, as equilibrium is approached under the joint influence of Commercial and Industrial Competition, the amounts of the factors[3]

thus be different from that to be adopted for an explanation of the fundamental causes " (p. 88).

[1] That the trouble does not increase proportionately would be a more concrete supposition. As Sidgwick says, "Though it is more troublesome to manage a large factory than one half the size, it can hardly be twice as troublesome." *Political Economy*, Book II. chap. ix. § 3.

[2] *Cp.* Marshall, *Economics of Industry*, 1st edition, Book II. chap. xii. § 4.

[3] The factors generally, and sometimes also the form of the function expressing the quantity of the product in terms of the quantities of the factors used.

are so varied as to fulfil the condition that equal efforts
and sacrifices on the part of the entrepreneur are attended
with equal remuneration.[1] This equality is irrespective
of identity in the relation between factors and product.[2]
It may exist whether that identity is supposed to be pres-
ent between industries of different sizes or, as in general
to be supposed, there is no identity in the relation between
factors and product for different individuals and industries.

The sort of adjustment thus postulated may be illus-
trated by a more familiar kind of surplus, that which
accrues to the landlord according to the received theory
of rent. Let there be a homogeneous tract of land equally
adapted to the cultivation of wheat and barley, owned
by a set of competing landlords, who accordingly obtain
an equal rent per acre whether wheat or barley is to be
grown thereon.[3] Now let a tax be imposed on the rent
of land used for growing barley. There must result a new
equilibrium, in which it remains true that owners of homo-
geneous land obtain equal rent per acre for whichever
purpose used, and that cultivators of wheat and barley
obtain, *ceteris paribus*, equal profits. These conditions
can be fulfilled if the extent of the land applied to the
cultivation of wheat is increased while the intensity of
cultivation is diminished, and contrariwise for barley
the extent is diminished and the intensity increased.
This proposition holds good whether or not the relation
between outlay and product[4]—corresponding to the shape
of the curve in the illustration which Professor Marshall
has made familiar[5]—is supposed identical for wheat and
barley, and even if the cultivator seeking the greatest

[1] The equality is that of an ordinary equation, not an identity.

[2] The function which expresses the amount of the product in terms of the
factors (including entrepreneur's work).

[3] Compare *Economic Journal*, vol. vii. p. 60, par. 1.

[4] The function expressing the product in terms of the outlay.

[5] *Economics of Industry*, 1st edition, p. 83. *Principles of Economics*, 4th
edition, p. 232.

possible profits is able to vary that relation in accordance with the "law of substitution." It is here assumed that the case of manufacture is not so different from agriculture, but that an analogous adjustment of "margins" must be considered to take place between large and small businesses under the conditions specified, and generally between different industries where industrial competition acts.

A similar adjustment must be postulated when we entertain the *third* definition of entrepreneur, and consider competing investors in the stock of companies which may at first be supposed equal in respect of risk, though not in size. The competitors being free to invest units consisting, say, of £100 or less in any kind of business (of the given riskiness), large or small, it follows that a return to a dose anywhere invested tends, *ceteris paribus*, to be the same.[1] This result, which is by no means a deduction from the general formula considered under our second head, may be supposed to be brought about by an adjustment of margins of the sort which has been explained.

Now at length the Ricardian theory of rent as ordinarily stated becomes exact,—the payment for land rented by a joint stock company ought to be just the difference between the returns (after capital has been replaced and labor paid) and the amount of capital laid out, multiplied by an average rate of profit.

Though the class of shareholder is the principal, it is not the only species, of the third kind of entrepreneur, if defined so as to include all risk-takers. As Mr. Hawley observes,[2] workmen take some risk, entrepreneurs who have

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[1] Accordingly, in order that equilibrium should be stable in this régime, investment in each industry ought to be pushed up to a point at which the law of decreasing returns is fulfilled in its *second* sense,—that the rate of total cost to total product increases with the increase of product. *Economic Journal*, vol. ix. p. 294.

[2] *Quarterly Journal of Economics*, vol. vii. (1893) p. 470.

no capital of their own run the risk of not being paid for their trouble. Enterprise may be taken as the essential attribute of a wide class entitled to a share in the national dividend along with the purveyors of land, labor, and capital. It does not seem to be a fatal objection that enterprise is hardly to be found in the concrete, separate from other factors of production. As Mr. Hawley replies,[1] labor and waiting, the attributes of familiar classes, are not to be found in abstract purity.

To some there may seem a more serious scruple: whether the undertaking of risk does even in thought constitute a fourth factor, whether the distinction between interest and the reward for risk is radical. It is all very well for Jevons to distinguish by different coefficients, p and q, the depreciation of future goods due to uncertainty and to remoteness. But, since the distant pleasure is always uncertain, can we really disentangle the two causes of depreciation?

Fortunately, these questions of logical definition and psychological analysis do not affect the important lessons respecting the participation of risk which have been taught by Professor J. B. Clark,—"that a corporation can run risks which the individual could not with prudence," that by forming corporations "we reduce the initial terrors of business enterprises."[2] It is an exemplification of the old maxim not to put all one's eggs in one basket. If a hundred persons are carrying each a hundred eggs, each independently running the risk of tripping and by the loss of all or many of his eggs being exposed to great privation, this great danger will be averted, this chance of great disaster will be commuted for a somewhat higher probability of a much more easily borne loss, if each person carries only one of his own eggs and one belonging to

[1] *Quarterly Journal of Economics*, vol. xv. (1900) p. 78.

[2] "Insurance and Business Power," *Quarterly Journal of Economics*, vol. vii. (1892) p. 40, *et seq*.

each of the rest, the total to be redistributed at the end of the journey to market or after sale.

It is noticeable that in Professor Clark's nomenclature this risk is borne by the capitalist. "The hazard of business falls on the capitalist." "Business repays men not only for their labors, but their fears." But this repayment is "not a part of mercantile profit": it is realized by the capitalist "as such." Admitting a real remuneration for risk, while giving a different name to the recipient from that which others have preferred, Professor Clark is perhaps not committed to the paradox which Mr. Hawley would affix upon the conception of the entrepreneur with vanishing profits,—our *fourth* species.

"To eliminate profit, wholly static conditions must be more absolute. . . . There must be a cessation of all variations due to the changeableness of the environment due to fire, lightning, hail. We must imagine industrial society in the static condition as an automatic machine, . . . working without friction in an absolutely unchangeable environment."[1]

This idea of perfect tranquillity is certainly inappropriate to the troubled world in which we live. "Things are always finding their level," like a fluctuating and, in nautical phrase, "confused" sea. The oscillating character of the waves is quite consistent with a gradual change of level, as when the tide is flowing. It is a legitimate conception, familiar in statistics, to regard a phenomenon as hovering about an average, even though that average is known to be changing. Let the great tidologist calculate the dynamics of the flow, but let him not convey the impression that but for the action of this flow there would be the level of the proverbial mill-pond. Very probably, however, Professor Clark would recognize the continuance of risk not involving secular progress,—due to unpredictable weather or credit cycles, for example,—but would

regard the remuneration for undergoing such risk as accruing to the "capitalist as such" rather than, with Mangoldt and others, as a part of the entrepreneur's gain. With regard to other elements of remuneration it is more doubtful whether Professor Clark would accept Mangoldt's statements as to the permanence of the entrepreneur's gain,— statements which read with their context, and attention being paid to Mangoldt's terminology, deserve much consideration.

We must suppose the existence of undertaker's gain [*Unternehmergewinn*],—otherwise what object has the entrepreneur to increase his business? (substance of p. 50).

The undertaker's gain (*Unternehmergewinn*) is "not simply something transitory," but a "permanent species of income" (p. 51).

"The undertaker's remuneration [*Unternehmerlohn*] preserves its position, though in a limited form" (p. 105. *Cf.* p. 169).

Perhaps Professor Clark would be satisfied with the "limited form" of the remuneration and the disappearance of certain other elements.[1]

It is always pleasant to believe that one's differences with high authorities are only verbal. This satisfaction may now be enjoyed with respect to M. Walras's doctrine that the entrepreneur makes neither gain nor loss. Professor Pareto[2] has made it clear that, as the object of the entrepreneur is to procure the greatest amount of satisfaction, so his income is not to be considered as *nil*, in the ordinary sense of the term. Rightly interpreted, the doctrine that "the entrepreneur makes neither gain nor loss," taken in connection with the "coefficients of production," appears to cover all the conditions of equilibrium, both those which are involved in what Cairnes called "industrial competition" and those which would be satisfied

[1] *Cp.* above, p. 169.

[2] *Cours d' Économie Politique*, passages referring to "entrepreneur."

even if we made abstraction of the tendency to equal advantages in different occupations.[1] But, while we accept the ideas, we are not bound to swear to the words, of any master; and the expression in question may be objected to on several grounds which will repay examination. It is violently contrary to usage; it lends itself to a dangerous equivoque; and it has led distinguished economists to paradoxical conclusions.

No amount of authority and explanation can make it other than a strange use of language to describe a man who is making a large income, and striving to make it larger, as "making neither gain nor loss." There is an oddity about the phrase which recalls the use of "gratis" by Sir Murtagh's lady in *Castle Rackrent:* "My lady was very charitable in her own way. She had a charity school for poor children where they were taught to read and write gratis, and where they were kept well to spinning gratis for my lady in return."

A more serious objection is that the term "making neither gain nor loss" has to be used in two different senses almost in the same breath. It is a sufficiently difficult lesson for the plain man to learn that the maximum of income which the entrepreneur aims at realizing is zero. But the difficulty is doubled when he comes to learn— as he must in dealing with a maximum problem—that the increment to that income due to the last increment of any factor of production is also zero. There is apt to arise a confusion between conditions belonging to the total and to the marginal quantity,—an ambiguity of a kind which has before now proved detrimental in economics.[2] A hasty reader of Professor Walras might sup-

[1] *Cp.* above, p. 166.

[2] Mill's hesitation between equal sacrifice and least sacrifice as the criteria of taxation may seem due to a confusion of this kind, as pointed out by the present writer in the *Economic Journal*, 1897. (Cp. *Mathematical Psychics*, p. 118.) Mill's ambiguity had already been noticed by Professor Carver in his article on "The Ethical Basis of Distribution" in the *Annals of the American Academy for* 1895, p. 95.

pose that it was intended to affirm that the entrepreneur made neither gain nor loss *at the margin:* whereas the meaning is, rather, that nothing remains to be distributed— on an average and apart from oscillations—after that the entrepreneur has paid a normal salary to himself.[1]

The implication that the remuneration of entrepreneur labor may be treated like that of any other labor presents some difficulty. It is the one obscure topic in Professor Barone's brilliant studies on Distribution.[2] His observations deserve to be quoted at some length. He first (in a note on p. 132) announces as true in a particular case, what is here regarded as true in general, that "there must be left to the entrepreneur's profit (*profitto dell' impresa*) the differentiating character of 'residual claimant'; and nothing else can be said but that profit is formed by the difference between the entire product and the remunerations of the various factors corresponding to (*ragguagliate*) their respective marginal productivities." But Professor Barone regards this enunciation as only provisional. He promises to show in a later section that

"with the increase in the number of the competing entrepreneurs the profit of the undertaking tends to lose more and more the character of residual claimant, and tends to conform to that of the law of marginal productivity."

In the later section he says : —

"If on the market there is only one entrepreneur Titius, and if he does not monopolize the product, that is if he in the management of his business arranges [*fa in modo di*] to obtain not indeed the greatest monopoly profit, but the greatest profit obtainable in a régime of free competition, . . . his profit will be [a surplus indicated by a figure which is not here reproduced]. But, if there is an entrepreneur Caius capable of entering into competition with the

[1] *Cp.* Pareto, *Cours,* Art. 87, "his salary as director of the enterprise being comprised in the expenses of production"; and the similar expressions of Professor Barone, quoted below.

[2] *Giornale degli Economisti,* February, 1896.

preceding, . . . the profit of Titius will be reduced below what he had
when he was alone on the market. And, if there is a third employer
also capable of entering into competition with the first two, the
profit of Titius will be reduced still more. The more the number
of employers increases, the more there is a necessary tendency
to a *limiting state* in which all the employers who continue to pro-
duce have a remuneration which, like that of any other labor,
satisfies the condition that the marginal disutility [*penosità*] of
the same labor [*medesimo*] shall be equal to the marginal utility of
the returns which that labor procures, *and not more than this.* And,
since it is this equality which characterizes the return to labor,
it follows (*ne viene*) as a legitimate consequence that in this limit-
ing state the remuneration of the entrepreneur may be treated
like the remuneration of any other species of labor."

The fact that wages are usually paid in advance is not
to the point, as Professor Barone very properly observes.
He proceeds:—

"These considerations seem to me to prove to demonstration how
profound and correct is Walras's conception of an entrepreneur
who under the conditions postulated makes neither gain nor loss
after having paid himself (or others, it is indifferent which) the
remuneration of the labor of direction and conduct of production.
And, if it is no wonder that this conception should not be com-
prehended by economists who have really very vague ideas of
quantity, it is absolutely astounding that the conception should
have been also made the subject of criticism by other economists
to whom the notions of quantity are quite familiar. . . . I frankly
must confess myself absolutely incapable of understanding how
any difficulty whatever can arise as to the validity [literally, the
affirmation] of this conception, which is indeed most simple."

Having called once more attention to the abstract charac-
ter of the conditions, Professor Barone reiterates:—

"In such conditions the law of marginal productivity extends
to the remuneration of the entrepreneur; and, after having re-
munerated all the factors (the work of the entrepreneur included)
in proportion to their marginal productivity [with a discount cor-
responding to the time elapsing between the service and the prod-
uct], there remains no undistributed residue."

If there could be any doubt about the meaning of this thesis, it would be removed by the unequivocal language of symbols employed in the Appendix,[1] where, by way of illustration, the labor of the entrepreneur is expressed by the total number of hours of work that he devotes to the business.

Upon this it may be remarked that the last state of Titius, after Caius and the rest have entered as competitors, seems identical with the case of "extinct" monopoly which was above[2] adduced, in order to exhibit the motives of the entrepreneur. As there appears, both before and after the competitors have entered the remuneration of the entrepreneurs, in Professor Barone's phrase, "satisfies the condition that the marginal disutility of the labor shall be equal to the marginal utility of the return which that labor procures." But neither before nor after the competitors have entered is there any reason for regarding the remuneration of the entrepreneur as the product of the number of doses (*e.g.*, hours worked) and the marginal productivity of a dose (multiplied by a coefficient depending on the length of the productive process[3]). It is only with respect to factors of production which are articles of exchange that the proposed law of remuneration, the "law of marginal productivity," is fulfilled in a régime of competition. Thus, in our typical example of black men assisting white men to catch seals,[4] what the black man gets in a perfect market is an amount of seal equal to the number of units of service which he supplies, multiplied by the quantity of seal for the sake of which he is just induced to offer an additional unit of service, the unit employed being a small quantity. Likewise, what the white

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[1] *Loc. cit.*, p. 153.   [2] Above, p. 166.

[3] *Cp.* note to p. 167 above; but remark that the correction proposed by Professor Barone for the effect of time is not identical with Professor Marshall's *accumulation* of price.

[4] Above, p. 160.

man gets in exchange is an amount of service equal to the amount of seal which he distributes to the black man, multiplied by the quantity of service for the sake of which he is just induced to offer an additional unit of produce. If the amount of service rendered may be taken as the measure of the black man's labor (or of some other factor of production supplied by him), the proposed law holds good for his share of the distributed produce. But, as the amount of produce given by the white man in exchange for services cannot be taken as the measure of his work, the proposed law does not hold for his share of the distributed produce.

This discussion will appear otiose to the economists who are not conversant with the science of quantity. The proposition that the remuneration of the entrepreneur is equal to the amount of his work multiplied by its marginal productivity will be interpreted by them as signifying simply that he will get more, *ceteris paribus*, the more work he does and the greater the addition to the produce which he would effect by doing a little more work. For them a *product* will do duty for a function of two variables which increases with the increase of either variable. But this easy interpretation is not open to mathematical economists. They must be aware that the formulæ in question affirm something more than the simple truth above stated. If nothing more than that simple truth can be deduced from the theory of Exchange, it ought not to be a matter of surprise that the "law of marginal productivity" applied to the entrepreneur should be challenged by those who affect mathematical precision.

The law of marginal productivity, then, is not fulfilled in the sense that the portion of the national dividend accruing to entrepreneurs is a sum of terms each of which is the product of an entrepreneur's work reckoned in hours, or similar doses, and the marginal productivity of a dose

(multiplied by a certain coefficient [1]). Let us see whether
the law is fulfilled when we take a larger dose, the total
work of an entrepreneur. The law will then be fulfilled
if the net gains of any entrepreneur tend to be equal to
what society would lose if he were removed. Can this be
generally affirmed? Let us look at the typical case of
distribution between whites and blacks above[2] instanced.
It may be granted that the white entrepreneur does not
normally obtain more than he adds to the common stock.
For otherwise the society would gain through his removal,
his black assistants either hunting by themselves or being
taken on by other entrepreneurs. And neither of these
suppositions is possible in a state of equilibrium; for, if
either were possible, it would have been already brought
about by the free play of self-interest, in a régime of com-
petition. The gain of a white man, then, cannot be greater,
but where is the proof that it cannot be less, than the loss
which would be occasioned to the society by his removal?

Such a proof might be forthcoming if the white men
were not, as hitherto supposed, genuine entrepreneurs,
but managers acting under entrepreneurs of our third
species, the stockholder. The income of the managers
will fulfil the marginal law of productivity if the new
entrepreneurs are conceived as competing against each
other in such wise as to bring about the result that no
manager earns more or less than what he adds to the profits
of his employers. The income of the new entrepreneurs
also fulfils the law; for the remuneration of this species
of entrepreneur—unlike that of entrepreneurs in general—
is proportional to the amount of the factor which they
contribute,—namely, capital invested.[3]

The affinity between entrepreneurs and salaried managers
in modern industry supplies the missing link for the gen-
eral proof of the new law. For, normally, it may be pre-

sumed that an independent entrepreneur (of our second species) does not make less (in addition to the profits that he makes or might have made by investing in some other business money of his own) than a manager of like abilities. And perhaps he does not make much more. The difference is possibly small,[1] probably diminishing, certainly difficult to verify statistically, perhaps hardly worth fighting about. Interpreted cautiously, the law holds good approximately. If the remuneration of the manager, like that of the "marginal shepherd," is just equal to the amount that he produces, then the remuneration of the entrepreneur is not very different from the amount that he produces. But, if the law of marginal productivity is fulfilled for the manager only while we consider doses less than his total work, say hours of work, then the law is fulfilled for the entrepreneur only so far as it is presumed from the similarity in nature and habits between the manager and entrepreneur that, when the total remuneration of each is nearly the same, the amount of work and its marginal productivity are not very different.

According to the interpretation which has been suggested, the new law of distribution would be fulfilled by an adjustment of the quantities involved,[2] the amount of each factor, not simply in virtue of the relation which subsists between the product and the factors of production.[3] The sense in which the law is fulfilled is otherwise conceived by a distinguished mathematical economist, Mr. Wicksteed, who regards the law as following from " the modern investigations into the theory of value,"[4] and

[1] Mainly and apart from "rents" of the order of quantity called by Mangoldt *Unternehmerlohn*.

[2] *Cp.* p. 169, above.

[3] The form of a function such as that represented by f in a preceding note (p. 167), or rather what that function becomes when the work of the entrepreneur enters as a variable.

[4] *Essay on the Co-ordination of the Laws of Distribution* (1894), § 2, and prefatory note.

seems to treat it as a clue whereby to investigate the nature of the relation between the product and the factors of production, including the work of the entrepreneur.[1] In fact, he finds that the product depends upon the factors by a relation which mathematicians designate a "homogeneous function of the first degree."[2] This is certainly a remarkable discovery; for the relation between product and factors is to be considered to hold good irrespectively of the play of the market: "an analytical and synthetical law of composition and resolution of industrial factors and products which would hold equally in Robinson Crusoe's island, in an American religious commune, in an Indian village ruled by custom, and in the competitive centres of the typical modern industries."[3] There is a magnificence in this generalization which recalls the youth of philosophy. Justice is a perfect cube, said the ancient sage; and rational conduct is a homogeneous function, adds the modern *savant*. A theory which points to conclusions so paradoxical ought surely to be enunciated with caution.

To sum up this criticism, as Distribution is a species of Exchange, it seems undesirable to employ a phrase so foreign to the general theory of Exchange as the dictum

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[1] The product being a function of the factors of production, we have $P = f(a, b, c, \ldots)$; and the form of the function is invariably such that, if we have $\pi = f(\alpha, \beta, \gamma, \ldots)$, we shall also have $\nu\pi = f(\nu\alpha, \nu\beta, \nu\gamma, \ldots)$ (*loc. cit.*, p. 4).

"Let the special product to be distributed (P) be regarded as a function (F) of the various factors of production (A, B, C, ...)" (*loc. cit.*, p. 8).

$$\frac{dP}{dA} A + \frac{dP}{dB} B + \frac{dP}{dc} C + \ldots = P$$

"under ordinary conditions of competitive industry" (*loc. cit.*, pp. 33–38).

[2] As pointed out by Professor Flux in his review of Mr. Wicksteed's essay, *Economic Journal*, vol. iv. p. 311. In Mr. Wicksteed's notation the function F must be of the general form $A\psi\left(\frac{B}{A}, \frac{C}{A} \ldots\right)$, where ψ is an arbitrary function. See Forsyth, *Differential Equations*, Art. 189, or Boole, *Differential Equations*, chap. xiv., Art. 6.

[3] *Loc. cit.*, p. 42.

that one of the parties to an exchange normally gains nothing. Innocently used at first, such paradoxes are calculated to lead to confusion and misrepresentation.

A similar remark applies to another form of the gainless entrepreneur, involved in Walker's analogy between profits and agricultural rent. Even on the simpler and provisional view which is confined to short periods and commercial competition, this form of expression has no advantage over the terminology proper to the general theory of Exchange.[1] When we consider long periods and industrial competition, Walker's theory has the graver disadvantage of not distinguishing between rent and quasi-rent. It seems to be generally admitted that Walker's masterly portrait of the industrial captain was not improved by his representation of profits as rent.[2]

Having now considered the party that takes factors of production in return for products, or the proceeds thereof, let us look at the other side of the counter,—the triangular counter across which we may imagine the three factors of land and labor and capital to be exchanged, if we place in the interior of the triangle an entrepreneur of Walker's type, our second species, dealing with three parties in quick succession, and in some sense simultaneously.[3]

At the height of abstraction from which it is here attempted to survey the economic world, what appears the most salient feature in the transactions respecting *land* is the circumstance that the quantity of ground, or at least space,[4] is limited, not capable of being increased

[1] As argued by the present writer in his Address to the British Association for the Advancement of Science, 1889, written before the publication of Professor Marshall's weightier judgment in the *Principles of Economics*.

[2] Compare Mr. J. H. Curran's temperate criticism in his study on Walker (in Conrad's *Abhandlungen*).

[3] In the sense in which equations are called simultaneous.

[4] *Cp.* Marshall on "extension" as the "fundamental attribute of land." *Principles of Economics*, Book IV. chap. ii. p. 221 *et seq.*, 4th edition. Not even the enterprise of Boston, which converted marshes into the site of noble

by human effort. From this property flow most of the general theories relating to the landlord's share in distribution,— that a tax on rent (proper) falls wholly on the land, that the remission of agricultural rent by landlords would not benefit the consumer,[1] and other propositions often connected with the formula that "rent does not enter into the cost of production." Some remarks on that time-honored formula seem called for here. It would not be consistent to have complained of the expression that "the entrepreneur makes no gain" as perplexing and apt to mislead, however innocently used by high authorities, and to pass over in silence this dictum about rent, against which and in favor of which much the same is to be said. Certainly, it is supported by very high authority,—the authority not only of Ricardo and Professor Marshall, but also of Hume, who in the letter which he wrote to Adam Smith on the publication of *The Wealth of Nations* (the letter which, written a few months before Hume's death, may be considered his economic testament) says, "I cannot think that the rent of farms makes any part of the price of the produce, but that the price is determined altogether by the quantity and the demand."[2] On the other hand, it can hardly be denied that the dictum in question is calculated to obscure the

streets, can form an exception to the law so stated. But the more familiar statement is accurate enough. For, as Professor Bullock has said (at the banquet of the Massachusetts Single Tax League, 1902), "it may be safely contended that the additions which man can make to the land surface of the globe are so small as to be a negligible quantity when we compare land with the things that human labor places upon it."

[1] The received proposition is of the nature of a first approximation, as pointed out in the *Economic Journal,* vol. vii. (1857) p. 57. When the writer there observed that "there might be now required a higher rate of remuneration to evoke the same exertion from the cultivator," *et seq.,* he was not aware that he had been anticipated by the very first writer who stated the true theory of rent, James Anderson, who says that the only consequence of remitting rents "would be the enriching one class of farmers at the expense of their proprietors, without producing the smallest benefit to the consumers of grain,—perhaps the reverse, as the industry of the farmer might be slackened." *Enquiry into the Nature of the Corn-laws* (1777) p. 48, note.

[2] Burton's Life of Hume, vol. ii. p. 486.

truth that "land is but a particular form of capital from the point of view of the individual manufacturer or cultivator";[1] that, as he doses land with capital and labor, so he doses capital and labor with land,[2] up to a margin of profitableness. And, in fact, the similarity of the factors of production from the entrepreneur's point of view does not seem to have been apprehended in all its generality by the classical writers. Thus Fawcett, who may be taken as a type, when explaining rent seems to posit the size of the farm as something fixed and constant.[3] J. S. Mill argues that "there is always some agricultural capital which pays no rent,"[4] not noticing the counter-argument that there is a portion of land which pays no interest.[5] These imperfections belong now, it may be hoped, to past history. And yet that the description of rent as not entering into price is apt to prove misleading may be inferred from the many protests which eminent critics have raised against Professor Marshall's use of the time-honored phrase.[6] Their criticisms attest the correctness of their own views rather than their capacity of appreciating the views of others. What should we say of critics who should think fit to read Mill a lecture on the errors of the Mercantile system, because Mill had employed the terms "favorable and unfavorable" exchanges! To have attributed to Professor Marshall the very error which he

[1] Marshall, *Principles of Economics*, Book V. chap. ii. § 5.

[2] The propriety of reversing the classical formula so as to make dose and patient change places is well expressed by Mr. Wicksteed, *Laws of Distribution*, p. 20.

[3] *Manual of Political Economy*, Book III. chap. iii.

[4] *Political Economy*, Book II. chap. xvi. §.4.

[5] As noticed by Professor J. B. Clark and other writers mentioned by Professor Fetter in the *Quarterly Journal of Economics*, vol. xv., note to p. 436.

[6] See in particular Hobson's *Economics of Distribution*, chap. iv.; Fetter, "The Passing of the Old Rent Concept," v. and vii. (3), *Quarterly Journal of Economics*, vol. xv. (1901); J. B. Clark, *Political Science Quarterly*, March, 1891; Wicksteed, *Laws of Distribution*, p. 47 (the last critic not referring *nominatim* to Professor Marshall). For a more sympathetic criticism of Professor Marshall's doctrine see *Economic Journal*, vol. v. p. 589.

by his doctrine of the "Margin-of-building" has done more than any other economist to obviate would be unpardonable if it were not excused by the misleading associations of an unfortunate phrase.

To return to the real, from the seeming, import of the phrase, we see that, as the offer of land is in general attended with no real cost, a tax upon the payment for land does not disturb production.[1] On grounds of distribution, too, a sort of income which increases without any effort on the part of the recipient is *prima facie* a suitable object for a specially heavy impost. On these grounds Mill's proposal to tax away the future unearned increment of rent is defensible, if accompanied with Mill's proviso, that existing interests should not be disturbed. For, as argued elsewhere,[2] a special tax on existing incomes from land would violate the two principal conditions of a good tax: it would both tend to diminish the amount of production, and also to impair the equality in the distribution of burdens between the owners of incomes derived from land and from other kinds of property.

The practical importance of Mill's proposal is greatly reduced by the proviso with which it is accompanied. For, in order that the State may make a good bargain by giving the market price for a certain class of future goods, the State must be able to look further ahead—must exercise the telescopic faculty of prospectiveness in a higher degree —than the ordinary capitalist. And it may well be doubted whether this condition is fulfilled by the politicians who act on behalf of the State. We hear much of instances,

[1] As Professor Carver said lately (at the banquet of the Massachusetts Single Tax League, 1902), a person who thinks that the repressive effect of a tax on land is at all comparable with the repressive effect of a tax on the products of industry must have an eye for exceptions like "a certain senator of whom it was said that he could see a fly on a barn-door without being able to see the barn or the door either." The incident in question may be elucidated by representing the "supply-curve" of land as a straight line. *Cp. Economic Journal*, vol. vii. p. 50.

[2] *Economic Journal*, 1900, "On the Incidence of Urban Rates," p. 505 *et seq.*

like that of Chicago, where the value of sites is said to have multiplied some eighty-fold in half a century; but we hear little of proposals to buy up at their present market value the site of some future Chicago, unless, indeed, as part of a scheme for Land Nationalization, which does not include compensation to vested interests. Unlike the husbandman, who plants trees the fruit of which he will not himself see, the advocates of a single tax and other socialist agitators grasp at the standing crop which has been sown by others, heedless whether cultivation in the future is thereby discouraged.

But, even if their outlook were as distant as it is bounded, there would remain the possibility that, though looking far ahead, they might not discern distant objects clearly. Mill cannot be accused of the shortsightedness which sacrifices the future to the present. He looked very far ahead. But he did not see what was coming, the fall of English rents. Actuated by the highest motives, he proposed an arrangement which was perfectly just to the landlords, and would have proved perfectly disastrous to the State.

Passing in the traditional order from *Land* to *Labor*, we may begin by considering a very abstract labor market, in which the difficulty caused by the "advance" of wages is kept out of sight.[1] The following example of such a labor market may be worth reproducing, although it is not a genuine case of Distribution: —

Let us suppose several rich men about to ascend some an easy mountain, some a difficult one, each ascent occupying a day. And let these rich travellers enter into negotiations with a set of porters who may be supposed many times more numerous than the

[1] There is an abstract point of view from which, as Professor Barone well observes (*Giornale degli Economisti, loc cit.*), the circumstance that wages are paid in advance is of secondary importance.

employers. An arrangement according to which the remuneration for ascending the easy and the difficult mountains was the same could not stand: it would not be renewed from time to time. For some of the porters employed on the difficult mountains, seeking to minimize the disutility of their task, would offer their services to travellers on the easy mountains at a rate somewhat less than the temporarily prevailing one. Nor would equilibrium be reached until each porter employed on a difficult mountain received an excess above the fee for the ascent of an easy one sufficient to compensate him for the extra toil. At the same time— simultaneously, in a mathematical sense—the increment of satisfaction due to the last porter taken on by each traveller would just compensate the purchaser of that labor for his outlay on it.[1]

In this example the great number of the employees as compared with the employers is not an accidental circumstance. Suppose that the arrangement which is common in the Tyrol—that each amateur ascensionist should be accompanied by only one guide—were for technical reasons universal. Then the bargain between travellers, on the one hand, and guides, on the other, would not in general be perfectly determinate. It would still indeed be true that "an arrangement according to which the remuneration for ascending the easy and the difficult mountains was the same could not stand." But it would no longer be true that the remuneration for the easy mountain—or, rather, for the average mountain, from which the fares both of the easier and the more difficult ascents might be measured—would be in general determinate.[2] There would in general exist no force of competition by which any particular arrangement (as to the average mountain) initiated by custom and accident could be disturbed. That is, still supposing the service of a guide or porter to be sold as a whole. For, if the labor of the assistants can be sold by the hour, or other sort of differential dose, the phenomenon

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[1] *Economic Journal*, vol. iv. p. 225.

[2] As argued in *Mathematical Psychics*, p. 42.

of determinate equilibrium will reappear. There seems no reason to think that the case of indeterminate equilibrium which has been illustrated is other than exceptional in the actual labor market, even where the bargain appears to be made for totals as distinguished from doses of labor,— situations rather than tasks. For there is, in fact, such a variety of situations attended with different amounts of work[1] as probably in practice to realize that divisibility of the thing supplied—here labor—which, together with the divisibility of the thing demanded,—here money,— constitutes a condition of a perfect market with determinate equilibrium.[2] Still, the point of theory is worth notice. Perhaps the friction in the labor market would be less if labor were sold freely by the hour (or other small "dose").

It ought to be mentioned that a different view of Exchange has been taken by a high authority on Distribution. Professor Böhm-Bawerk presents as the general type of a market that very case which is here regarded as exceptional. On one side of the markets are put dealers each with a horse—or it may be a batch of several horses[3]— which he will not sell under a certain price, on the other side buyers each of which will not go beyond a certain

[1] *Cp.* Marshall, *Principles of Economics,* Book VI. chap. ii. § 2, note, p. 599, 4th edition. Consider the case of managers, above, p. 180.

[2] *Mathematical Psychics,* p. 18.

[3] In the criticism of the *Positive Theory of Capital,* at p. 333 of the *Economic Journal,* vol. ii., repeated from the Address to the British Association, Section F, 1889 (reprinted in the *Journal of the Statistical Society,* December, 1889), it was too leniently suggested that the author, in a subsequent note (p. 214, Smart's translation of *Positive Theory*), brought in the essential circumstance which his main illustration omits; namely, doses with varying marginal utility. It would rather seem, however, that the stud of horses permitted in the said note does not differ essentially from the single horse of the main illustration. It seems to be treated as a mass of commodity which the seller offers, the buyer takes or leaves, as a whole. At any rate, the writer has failed to see the significance of divisibility in the commodity. For, otherwise, he would not have attributed so much "latitude" (*loc. cit.* quoted in the text) to the case in which the sellers (and likewise the buyers) do not differ from each other in their subjective valuation of a horse.

price. The following scheme is given as an example of
such data:[1] —

	Buyers.						Sellers.				
A_1 values a horse at . . . £30 (and will buy at any price under).						B_1 values a horse at . . £10 (and will sell at any price over).					
A_2	"	"	"	"	28	B_2	"	"	"	"	11
A_3	"	"	"	"	26	B_3	"	"	"	"	15
A_4	"	"	"	"	24	B_4	"	"	"	"	17
A_5	"	"	"	"	22	B_5	"	"	"	"	20
A_6	"	"	"	"	21	B_6	"	"	"	"	21 10s.
A_7	"	"	"	"	20	B_7	"	"	"	"	25
A_8	"	"	"	"	18	B_8	"	"	"	"	26
A_9	"	"	"	"	17						
A_{10}	"	"	"	"	15						

From these data it is deduced that the price of a horse
must be between £21 and £21 10s. But, if the data had
been different, the price might not have been thus deter-
minate. "If there are, for instance, ten buyers who each
value the commodity at £10, and ten sellers who each
value it subjectively at £1, obviously all the ten pair can
come to terms, and the zone which lies between the valua-
tion of the last buyer and the last seller represents the
wide latitude between £1 and £10." Of this character,
according to the writer, are the circumstances of the labor
market.[2] In such a case some further datum is required
to determine price. "That this latitude should be narrowed
down, the further circumstance must be present that the
desire of the buyers is directed to an unlimited number
of goods, while at the same time the total amount of means
of purchase must be strictly limited, and the buyers must
be determined to spend the whole of this sum in purchase
of the commodities in question."[3] This condition is ful-

[1] *Positive Theory of Capital* (translated), Book IV. chap. iv.

[2] *Op. cit.*, Book IV. chap. v. p. 217; Book VI. chap. v. ("On the General Sub-
sistence Market").

[3] *Loc. cit.*

filled, according to Professor Böhm-Bawerk, by the "general subsistence market."

This example will hardly be accepted as typical of a market by the mathematical economists who walk in the way of Gossen. Agreeing with the Austrian leader that value rests at bottom on subjective estimates, they will accept his scheme, just as they would accept the description of a common auction, as illustrative of that attribute. But they may complain that the illustration does not illustrate another attribute which they regard as essential to the determination of value in a market,—the circumstance that each party on the one side is free, in concert with some party or parties on the other side, to vary the amounts of those quantities on which depends his advantage—the *quid* and the *pro quo*—up to a limiting point, or *margin* at which he estimates his advantage to be a maximum. The " "marginal pair" of the Austrian scheme hardly exemplifies the *law of marginal utility*. We require to know, not so much the least price which each horse dealer will take for his horse or stud,[1] but how much horseflesh each individual, or at least all collectively, will offer at each of several prices, with similarly graduated data for the would-be buyers. Granted data of this sort, the mathematical economist need not trouble himself much about a matter which is vital according to the Austrian scheme,— whether the "subjective valuation" of a horse is the same (or very similar) for all the sellers, while the dispositions of the buyers are likewise identical. The case of like dispositions does not constitute a special variety of the problem, one which is insoluble without additional data. Far from being anomalous, that case may be normally assumed as a harmless and convenient simplification, very proper to an introductory statement of the general theory.[2]

[1] See note at p. 189.   [2] It is so assumed in *Mathematical Psychics*.

> "Nec Deus intersit, nisi dignus vindice nodus
> Inciderit "—

The case of like dispositions does not present any peculiar difficulty calling for so very mechanical a *Deus ex machina* as the hypothesis that "the total amount of means of purchase must be strictly limited and the buyers must be determined to spend the whole of this sum in purchase of the commodities in question." It is riding a one-horse illustration to death to put the accidents of an exceptional sort of auction as representative of the actual transactions by which the great mass of national income is distributed.

This criticism, it must be freely admitted, involves an issue about which legitimate differences of opinion may exist,—what is the most appropriate conception of the process by which value is determined through the higgling of the market? Any simple conception must involve a considerable element of hypothesis, not admitting of decisive proof. The hypothetical character of the inquiry will appear if we look back to that model labor market in which guides or porters were supposed to be hired by amateur mountaineers. It was tacitly assumed that each party has certain dispositions as to the amount of money that he is willing to give or take in exchange for a certain amount of work,—a scale of subjective estimates[1] which is supposed to be formed before the parties come into communication, and not to be modified by the chaffering of the market. The constancy of these dispositions being assumed, it is presumed that somehow a state of equilibrium will be brought about, such that the party on one side cannot improve his position by entering into new contracts with some party or parties on the other side. The better opinion is that only the position of equilibrium is

[1] Whether expressed by a demand-curve (or schedule, *cf.* Marshall, *Principles*, Book III.) or by way of *indifference curves*, as Professor Pareto has suggested (*Giornale degli Economisti*, 1900).

knowable, not the path by which equilibrium is reached. As Jevons says, "It is a far more easy task to lay down the conditions under which trade is completed and interchange ceases than to attempt to ascertain at what rate trade will go on when equilibrium is not attained."[1] Particular paths may be indicated by way of illustration, "to fix the ideas," as mathematicians say.[2]

In this spirit two kinds of higgling may be distinguished as appropriate respectively to short and long periods. *First*, we may suppose the intending buyers and sellers to remain in communication without actually making exchanges, each trying to get at the dispositions of the others, and estimating his chances of making a better bargain than one that has been provisionally contemplated. By this preliminary tentative process a system of bargains complying with the condition of equilibrium is, as it were, rehearsed before it is actually performed. Or, *second*, one may suppose a performance to take place before such rehearsal is completed. On the first day in our example a set of hirings are made which prove not to be in accordance with the dispositions of the parties. These contracts terminating with the day, the parties encounter each other the following day,[3] with dispositions the same as on the first day,—like combatants *armis animisque refecti*,[4]— in all respects as they were at the beginning of the first encounter, except that they have obtained by experience the knowledge that the system of bargains entered into on the first occasion does not fit the real dispositions of

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[1] *Theory*, 2d edition, p. 101-2. The context seems to impose an unnecessary limitation: "Holders of commodities will be regarded not as continuously passing on these commodities in streams of trade, but as possessing certain fixed amounts which they exchange until they come to equilibrium." The "fixed amount" may be considered as renewed from time to time for each of the individuals placed along a "stream of trade" (see below, p. 197).

[2] This view of the subject is presented at greater length in an article in the *Revue d'Économie Politique*, January, 1891.

[3] They *recontract*, in the phraseology of *Mathematical Psychics*.

[4] *Æneid*. xii. 788.

the parties. The second plan of higgling was supposed
in the example,[1]—the plan which is more appropriate to
"normal" value.

Contemplating the theory of exchange in the abstract,
we may exclaim with Burke, "Nobody, I believe, has ob-
served with any reflection what market is without being
astonished at the truth, the correctness, the celerity,
the general equity, with which the balance of wants is
settled." [2]   But, when we come to the labor market, or any
particular market, we must carefully inquire with what
degree of approximateness the above-stated fundamental
postulate[3] holds good. When the bargaining extends over
a considerable time, changes are apt to occur in the dis-
positions of the parties, whether independently of each
other and sporadically, or in a manner even more fatal
to the theory, by way of imitation.[4] Also, where there
occurs a series of encounters between buyers and sellers,
the results of the earlier encounter may affect the dis-
positions with which the later ones are entered on.
The terms which the laborer is ready to offer and
accept are altered by the alteration in his habits and
efficiency which is the consequence of previous bad bar-
gains.[5]

The peculiarities of the labor market pointed out by
Professor Marshall go far to modify the general presump-
tion in favor of *laisser faire*. But less careful writers are
less successful in supporting the burden of proof which lies
on those who profess to add to or take away from that
outlined theory of Exchange which seems to express all

[1] Above, p. 188.

[2] *Thought and Details on Scarcity*. He is speaking with special reference
to the labor market.

[3] Above, p. 192.

[4] See Pigon on "Utility" in the *Economic Journal* for March, 1901. Com-
pare, as to the absence of predeterminateness in the dispositions of parties to
the labor market, Walker, *Political Economy*, Art. 320.

[5] *Cp.* Marshall, *Principles of Economics*, Book VI. chap. iv., and Walker,
Political Economy, Art. 308 *et seq*.

that is known *in general* about the working of a market. A warning example of such modification not warranted by specific experience is the doctrine of the wage-fund, which is now universally discredited, and ought always to have excited suspicion and challenged proof because, as already intimated in another connection, it is a supposition repugnant to the general theory of Exchange that "the total amount of means of purchase must be strictly limited, and the buyers must be determined to spend the whole of this sum in purchase of the commodities in question." [1] Perhaps, as Sir Leslie Stephen says with reference to the classical writers, "the assumption slipped into their reasoning unawares." [2] Sometimes it may have been intended only to convey that early lesson which is contained in our opening paragraphs,—that no party to production can expect to earn more than the total produce. Sometimes there was contemplated a more definite statement true of short periods,—a truth which has been well stated by Professor Taussig in his article on "The Employer's Place in Distribution," and at greater length in his book on *Wages and Capital :* —

"The whole of the real income available for the community is not in any substantial sense at the disposal of the capitalists. . . . A large part of the commodities now on hand would not serve their turn. The supply of bread and flour and grain at any moment is adjusted to the expected needs of the whole mass of consumers. . . . The effective choice which the capitalists would have . . . would be thus confined, for the time being at least, within limits not very elastic." [3]

Let us suppose that the working classes live on bread only, while the capitalist classes consume buns also.

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[1] Quoted from Böhm-Bawerk (above, p. 192), who himself compares his theory with that of the wage-fund (*Positive Theory*, p. 419). Both theories seem true of short periods. The context accords with the view here taken of the theory, as true of short periods, inadequate to long periods.

[2] *The English Utilitarians*, vol. iii. p. 216.

[3] *Quarterly Journal of Economics*, vol. x. p. 74.

On a day, after a conference between employers and employed, the partition of the national dividend is altered in favor of the capitalists. Yet they will be unable to benefit immediately by the change. On that day more buns will not be forthcoming, all the bakers' ovens being preoccupied with bread.

For the purpose of illustration there has been chosen a specially simple case in which the articles consumed by the two classes are formed out of the same material, and by a process which is identical up to the penultimate stage. The stream of production does not bifurcate till it debouches into the mouths of the two parties to Distribution.

When we consider longer tracts of that stream, there comes into view a circumstance to be discussed under the head of *Capital*, the influence of time on value. To illustrate the distribution of produce between those who have contributed at different times to its production, let us at first make abstraction of other differences, and imagine economic men uniting the functions of workman and capitalist-entrepreneur, differing only in the amount of capitalization, the length of time during which their labor is invested. One labors at proximate means, another at remote means, tending to the ultimate product out of which all the producers are remunerated. An idea of a train of production formed by successive operations directed to an ultimate product may be obtained by watching any factory. Here you have the raw cotton-wool put in, there you see a "sliver" of carded cotton flowing from one machine *en route* to another, until at the last stage there comes out the finished article. To illustrate the process of distribution, we must now conceive a backward flow of the ultimate product to the several producers. We might imagine each one's share to be conveyed to him by some

contrivance like those wondrous little vehicles in the Boston Public Library, which, as if gifted with human intelligence, find their way about the building to the particular place where each book belongs. To illustrate the effect of distance in time on distribution, we must further modify the model presented by an ordinary factory. We must suppose the interval of time between the processes to be greatly magnified, months being substituted for minutes. Then there will come into view the circumstance to which attention is particularly directed,—that a larger share will be conveyed to each producer (other things being equal), the greater his distance from the final stage. There will thus be a continual flow of materials in process of manufacture onwards and of products ready for consumption backwards, if the work at each stage is steadily maintained,— provided that there is a continual stream of raw material, and that the machines are continually renewed.[1] Considering the continuous round of production and consumption, we realize the important truth which Mill has thus expressed :—

" The miller, the reaper, the ploughman, the plough-maker, the wagoner and wagon-maker, and the sailor and ship-builder, when employed, derive their remuneration from the ultimate product,— the bread made from the corn on which they have severally operated or supplied the instruments for operating."[2]

To represent the continual expansion of value as the present ripens into the future, a series of concentric circles has been happily employed by Professor Böhm-Bawerk.[3] Varying his illustration, let us suppose the circles to be drawn on ground which rises uniformly from the outmost circle towards the centre O in the accompanying diagram at which the apex tapers to a needle-point.[4] The circles are

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[1] *Cp.*, p. 201, below.   [2] *Political Economy*, Book I. chap. ii. §§ 1, 2.

[3] *Positive Theory*, Book II. chap. v.

[4] The series of highering circles is not shown in the diagram after the fifth circle.

drawn at equal distances as measured on the surface, and therefore, in a bird's-eye view which the diagram is intended to represent, become huddled together in the neighborhood of the central height. Across the circles, down the hill, flow streams with uniform velocity, so as to pass
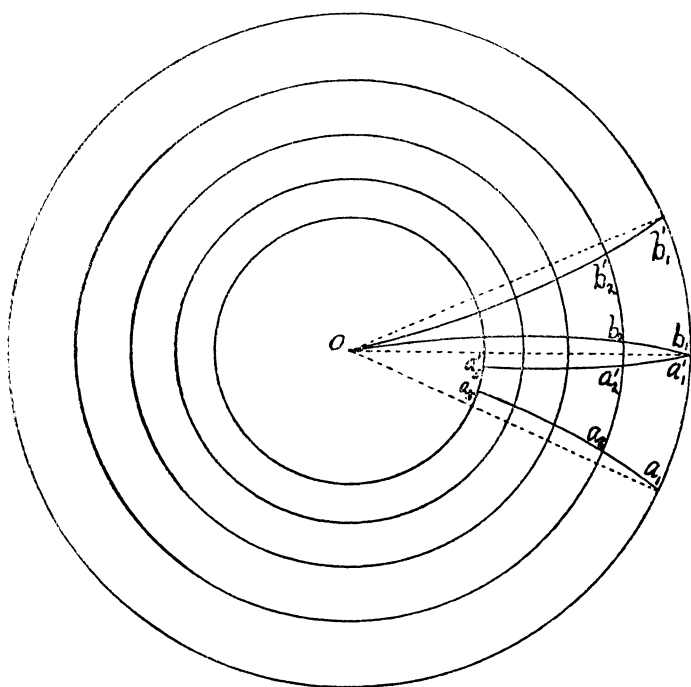
from circle to circle in a unit of time. The breadth of a stream increases with its length,—not in direct proportion to the length, but according to the law of *accumulated* price.[1] The volume of the stream is proportioned to its breadth and to its depth (not shown on the figure). The stream takes its rise at some position on the channel (*e.g.*, at $a_5a'_5$), the flow per unit of time at that point being proportioned to the energy put forth in pumping from a

[1] Marshall, as cited above, p. 167.

certain source. As the volume thus originated rolls down the channel, it continually increases by infiltration from the neighboring soil without any additional pumping, so that, the depth being preserved constant, the volume is proportioned to the increasing breadth.[1] Besides this increase due to its defluxion, the volume may also in the course of its downward flow be increased by additional pumping from a second source (*e.g.*, $a_2a'_2$). This second increase corresponds to an increase in depth (not shown in the figure); and this second contribution is augmented, like the first, by the infiltration which attends defluxion. There may be as many sources as there are circles cut by the descending stream. But there need not be a source at each interval. The equidistant circles correspond to successive lines, not always coincident with successive stages of production at each of which additional labor is applied.[2] The train of production thus represented terminates in a product ready for consumption—it may be loaves or ribbons, wine or shoes—on the shore of a circumfluent sea of commodities. As in the natural world rivers are replenished by the melting of the snow, which is formed on mountains by the congelation of vapor, which is wafted up from the ocean, into which the rivers flow down, so in the *mundus economicus*, by a compensation carried into

[1] The broadening of the stream corresponds to the two consilient facts, that future pleasures are discounted and that production is increased by "roundabout" methods. As to the first of these facts, see in Marshall's *Principles of Economics* the passages which relate to *discounting future pleasures*, and the remarks on those passages in the review of the second edition of the *Principles* in the *Economic Journal*, vol. i. (1891) p. 613. See also the admirably clear explanation and illustration given by Professor Carver in his article on "Abstinence and the Theory of Interest," *Quarterly Journal of Economics*, vol. viii. (1893) p. 48. As to both the first and second facts, see Böhm-Bawerk's well-known expositions. But as to the consilience of the two facts see, rather, Professor Marshall on the "fundamental symmetry" between the action of Supply and Demand (noticed in the review referred to). See also Professor Carver's explanation of the double statement that interest is payment for the sacrifice of abstinence, and that interest is paid because capital is productive (*loc. cit.*, p. 43).

[2] Corresponding to the machines in the illustration given in the preceding paragraphs.

more just detail, labor is restored and re-created by a re-
freshing rain of commodities derived from that sea into
which all finished commodities are discharged.   Volatile
shoes and wine, and other commodities in due admixture
up to a certain value, find their way to each point upon
the heights from which a source has been tapped, the vol-
ume of this return corresponding to the volume of the
original contribution,—not indeed the same, but the same
increased by a factor of accumulation, the ratio which
the breadth of the stream at the littoral bears to its breadth
at the point of origin (*e.g.*, $a_1a'_1 : a_5a'_5$).   The flight of the
commodities from the littoral to the heights need not be
supposed to occupy an appreciable time.[1]

The idea of a Flow which has been illustrated is pri-
marily applicable to the case in which materials and con-
sumable commodities are used up once for all within a
unit of time.   But the case of labor invested for longer
periods is easily assimilated.   Suppose that a plough lasts
five years, and that in each year of its existence it makes
an equal addition to the consumable crop, the year being
taken as the unit of time.   Then, although the plough may
have been made in a week or month, the labor of its pro-
duction is to be considered as invested in five unequal
portions at unequal distances in time from the epoch at
which the invested labor meets with its return.   The total
labor of making the plough may be considered as applied
at five positions $(a_1'a_1, a_2a'_2, \ldots a_5a'_5)$ in five contributions,
respectively proportioned to the breadth of the stream at
these points.   If labor is invested in the production of a
machine, imagined by economists, which lasts forever,[2]
or, what comes to the same, an improvement, such as the

[1] In accordance with the truth that finished goods kept in stock are of the
nature of capital, for the "investment" (*cp.* Jevons, *Theory*) of which the
retail dealer will normally seek compensation in the price paid by the con-
sumer. It would be convenient in this connection to be able to use the
French terms *restauration* and *consumation*.

[2] Mill, *Political Economy*, Book I. chap. vi. § 2.

draining of land or opening a mine, or cutting an isthmus, which is calculated to yield a constant income for an indefinitely long series of years, then the series of positions along the stream at which the labor is supposed to be invested must be carried back indefinitely (see the channel of which the mouth is $b_1b'_1$,) up to that needle-point whose tapering dimensions correspond to the perspective of an indefinitely distant future.

Eternal machines are not very common; but the conception may serve to illustrate a species of tool or implement of which the race remains immortal, though the individual is worn out and perishes. Of this kind are implements which are directed not only to produce goods immediately ready for consumption or implements of a kind different from their own, but also to reproduce their own kind. Hammers and axes are presumably of this kind in a primitive society; in an advanced state of industry, some more complicated engines.[1] Such machines may be compared to horses, if used not only as beasts of burden, but also as stallions. The demand for such creatures is presumably influenced by the expected series of future generations, so far as commercial prospectiveness may extend. In the stationary state of steady motion, here provisionally contemplated, reproductive machines would be illustrated by beasts of burden of which the breed does not sensibly improve in successive generations.

Two channels only have been represented in the diagram, one of finite, the other of infinite length, with breadth exaggerated for the sake of clearness. Properly, there should be as many channels as there are categories of articles ready for immediate consumption,—"goods of the first order," as the Austrians say; and the breadth should be

[1] Or rather a certain system of machinery. *Cp.* Marx on machines produced by machinery, *Capital*, ch. xv.

such as to allow of the corresponding number of sectors being fitted into the circle. Another circumstance which must be left to the imagination is the introduction of one and the same article into several streams of production at different distances from the final stage. Coal, for instance, so far as it is used for warming dwelling-houses, is a good of the first order; so far as it is used to drive machines,—themselves perhaps used only to produce other machines,—coal is to be placed among the higher orders.

The distinction which has been drawn between work which is applied in the neighborhood of and at a distance from the final stage of production is not coincident with the distinction between the saving and the non-saving classes. The shower of commodities apportioned to each spot according to its height above the littoral as well as to the volume of value which there took its rise, is not "like the gentle rain from heaven." It does not drop impartially on all who have been concerned with the work of eliciting the stream. Those who have done the common labor of pumping—the drawers of water—fare no better than if that work had been done at the littoral. In fact, it is proper to conceive that it was done at the littoral. As the energy generated at the Falls of Niagara is transmitted for use to a point higher up on the river, so on the stream of production the work of pumping is mostly done at the littoral, though it is applied at the heights. For instance, on the first stream an amount of work proportioned to $a_3 a'_3$ might be done at the littoral, and be paid for in commodities at the rate current on the littoral; that is, without the augmentation of value which is due to defluxion. The remainder of the volume of value which is discharged per limit of time—that is, $a_1 a'_1$ *minus* $a_3 a'_3$—flies off to those who occupy the height represented by $a_1 a_1'$.

If now it is asked where *rent* comes into this representation of distribution, the answer is to be found in the theory

(above, p. 184) that from the point of view of the entre-
preneur the use of land appears in the same light as the
use of laborers,—as a factor of production. The idea of
a steady cyclic flow which we are striving to win becomes
not much more complicated when we imagine that those
who, placed on the heights, preside over the origination
of productive streams, obtain the material that is to form
the current, the precious fluid which it is their office to
start upon its downward flow, not solely from a pumping
proletariat, but also from the fortunate owners of springs
which gush spontaneously. There is, indeed, this difference
between the laborer and the land-owner: that, whereas the
former (even in the present age and still more when the
classical economists flourished) has to spend a great pro-
portion of his daily wage upon his daily necessaries, and
therefore in respect of the bulk of his income *must* be
placed at the littoral line, the latter *may* save a great part
of his income, when it is greatly in excess of his daily
necessaries, and in particular, with respect to that great
portion, may defer fruition until the stream shall have
flowed down from the point at which his contribution is
applied to the point at which production becomes merged
in consummation. Another difference between land and
labor in their relation to capital and enterprise arises from
the circumstance that, unlike the laborer (in a free country),
land itself, as well as its use, is sold. Whence arises a
well-known correspondence between rent and interest in
their relation to the capital value of land. This similar-
ity will not be mistaken for identity[1] by those who find
the essential attribute of rent in the *limitation* of the ob-
jects for which rent is paid.[2]

[1] "The attempt of certain writers to refine away this traditional distinction
between land and capital, rent and interest, impresses me as a subtle obscura-
tion of plain facts," well remarked one of the speakers at the recent banquet
of the Massachusetts Single Tax League (1902).

[2] *Cp.* above, p. 183, Marshall, *Principles, sub voce* "Rent."

To complete the analysis of the parties to Distribution, it may next be required to distinguish the capitalist from the entrepreneur. They are both easily distinguished from the salaried manager in that he is at the littoral, in that respect like the common workman, while they are both above that line. But to draw a line in the series of shades which intervene between the employer of Walker's type and the mere shareholder, to determine at what point the capitalist ends and the entrepreneur begins, appears to defy analysis. As Thought and Emotion are inseparably blended, though one may so far preponderate as to give its name to the state of consciousness at any time, such is the inseparable connection, such the intelligible but not exactly definable distinction, between Enterprise and Saving. The indefiniteness of the relation is illustrated by the shifting use in economic literature of the term Profit.[1]

That profit other than remuneration for managerial work should be transmitted to those who occupy a position on the heights—often the easy position of a dormant shareholder—is certainly invidious and difficult to justify to those who toil below. Yet it may be reflected that the condition of those below would have been worse if those above, or those from whom they purchased or inherited their position, had not been content to wait for future goods instead of grasping at immediate pleasure. The Flow so beneficial to all classes would never have been set up without abstinence.[2] It could not continue in its

[1] As instructively pointed out by Mr. L. L. Price in his article on "Profit-sharing" published in the *Economic Journal*, vol. ii. (1892), and in his *Economic Science and Practice*, p. 75 and *ante*.

[2] Compare Adam Smith. "By what a frugal man annually saves he not only affords maintenance for an additional number of productive hands for that or the ensuing year, but, like the founder of a workhouse, he establishes, as it were, a perpetual fund for the maintenance of an equal number in all times to come." *Wealth of Nations*, Book II. chap. iii. In our metaphor, taking up a new position on the heights corresponds to this establishment of a perpetual fund.

present magnitude but for the continued abstinence of each one who has a right to dispose of wealth which is in course of production,—make a bonfire of it, if he can get a momentary pleasure from that extravagance, or by some less simple, though more familiar, increase of unproductive consumption "eat up his capital."

The consequences of an increase in unproductive consumption may be contemplated by reversing the consequences of an increase in parsimony. The latter increase forms part of a larger subject, economic progress. The progressive change in the volume of value and channels of production cannot be understood until there has been attained what was the object of the preceding paragraphs, —the clear idea of a steady flow in channels for a time unchanged.[1] The study of this stationary state is perhaps the part of economic science which principally deserves to be described as theory of Distribution. In these pages it is not attempted to go far beyond the comparatively narrow round of steady motion in fixed cycles of production and consumption. It must suffice to indicate three species of progressive alteration in the economic mechanism. There is, *first*, a uniform increase in the number of both capitalists and laborers, or, more generally, capital and labor, other things being the same. This change presents no difficulty: it may be represented by an increase in the *depth* of all the channels. *Second*, the rate at which the breadth of the channels diminishes as one ascends from the littoral—in other words, the rate of interest— might be diminished. A limiting case of this species is put by Mill when he supposes unproductive expenditure of capitalists to be "reduced to its lowest limit." Conceivably, this change might have no other effect than to reduce the portions accruing to the capitalists—such as

[1] On the nature of the steady flow with which we are concerned see Marshall, *Economic Journal*, vol. viii. p. 40, and *Principles of Economics sub voce* "Stationary State."

$a_1a_1'—a_3a_3'$—to a minimum. The capitalists with new eagerness bid against each other for the service of the laborers; but, if the latter do not give more work for higher pay, the consequences might be a new equilibrium in which the same volume of value is steadily rolled down the same channels of trade, though the portion which flies back to the heights is a minimum. But, even if the quantity of value continued constant, it is hardly to be supposed that the quality[1] of the commodities which make up the amount would remain unchanged. And, in fact, an increase of wages would probably be followed by an increase in the number and efficiency of the wage-earning classes.[2] And these results would favor the occurrence of a *third* kind of progress which may, however, be considered as arising independently of the others; namely, the lengthening of the trains of production.[3] It may be doubted whether any great lengthening of the trains is possible without a concomitant improvement in the arts of production; yet, as Sidgwick observes,[4] invention is not necessarily followed by increase of capitalization.[5]

The third head of progress even more surely than the second will be attended with changes in the channels of production. As already observed[6] with reference to the portion of truth contained in the wage-fund theory, time will in general be required for the carrying out of such changes. The means of production which are rolling

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[1] *Cp.* Mill, *loc. cit.*—"there would no longer be any demand for luxuries on the part of capitalists."

[2] *Cp.* Marshall, *Principles*, Book IV. ch. xiii.

[3] It is possible, as Mill shows, *Political Economy*, Book I. chap. vi. § 2 (*cp.* Ricardo on machinery and Mr. Pierson, *Principles of Economics*, p. 311) that lengthening the period of investment, and also invention, while it increases the amount of goods accruing to the capitalist, may diminish the amount accruing to the workers. What Mill says in this connection of the "fresh creation" of capital and "additional saving consequent on improvements" is made more intelligible by the use of the illustration here offered.

[4] *Political Economy*, Book I. chap. iv. § 8.

[5] *Loc. cit.*, Mill treats capital and arts of production as independent variables. *Political Economy*, Book IV. chap. iii.

[6] Above, p. 195.

down the channels at the instant when the change begins must all or in great part be suffered to run out: otherwise there will probably be a considerable waste of labor, and interruption to consumption. One delicate adjustment which would be deranged can only be alluded to here,—the monetary circulation, especially that form of it which consists of debts that are continually "cleared," or cancelled. We might imagine the flow of factors in the channels of production and the flight of finished products backward on the way to consumption to be attended each with a displacement of air in a direction opposite to the main movement,—light counter-currents which have their use in facilitating the movements of solid wealth, and in the fulfilment of their useful function continually meet and neutralize each other. But, evidently, we have reached the degree of complexity at which the illustration becomes more difficult to understand than the thing which is to be illustrated. For a more concrete embodiment of a more complete theory the student is referred to the *Principles of Economics,*—a reference of which the value is, if possible, enhanced by the solid work which Mr. N. G. Pierson has published under the same title.[1]

The preceding hints and metaphors and warnings may assist the student to obtain a general idea of the process by which distribution of the national income is effected. An outline of theory so abstract is not to be despised as useless. It satisfies a legitimate curiosity. It is part of a liberal education. It is comparable in these respects with an elementary knowledge of astronomy. Such knowledge will not be of much use in navigation. And yet it has a certain bearing on real life. The diffusion of just notions about astronomy has rendered it impossible for astrologers any longer to practise on the credulity of mankind.

[1] Translated into English from the Dutch by Wotzel.

A knowledge of first principles affords a test by which the authority of those who offer themselves as guides may be estimated. A little science has a further use: it is of assistance in obtaining more.

As the astronomer will proceed from a first approximation to a second, so economists should soften the hard outline of abstract theory by a regard to particular circumstances. As he in dealing with a new object will make certain of his first approximation,—will consider, for example, whether an ellipse or a parabola fits better to the orbit of a new comet,—so it behooves us to consider whether the classical hypothesis presupposed in the preceding page [1]—two-sided competition [2]—is appropriate to the conditions of modern industry. The hypothesis of two-sided monopoly [2] is strongly suggested by what we see before us,—consolidated capital confronted by consolidated trade-unions. But it is alleged that beneath that appearance the forces of competition are effectively at work; that the settlement which is apt to be, and ought to be, agreed to between a combination of Capital and a combination of Labor is no other than that which would have been determined by competition if the individuals now combined had been free to act competitively. No one has expressed this view with more authority and decision than Walker:—

"Competition, perfect competition, affords the ideal condition for the distribution of wealth."[3]

"Competition affords the only absolute security possible for the equitable and beneficial distribution of the products of industry."[4]

To the same effect, Professor Clark, when he teaches that

"The question whether the laborer is exploited and robbed depends on the question whether he gets his product."[5]

[1] See the opening paragraph, pp. 159–160.

[2] The useful phrases of Dr. Böhm-Bawerk.

[3] *Political Economy*, par. 466.   [4] Ibid., par. 467.   *Cp.* par. 343 *et seq.*

[5] *The Distribution of Wealth*, chap. i.

What is meant by getting his product appears from the following passages:—

"What we are able to produce by means of labor is determined by what a final unit of mere labor can add to the product that can be created without its aid." [1]

"If each productive function is paid for according to the amount of its product [thus reckoned], then each man gets what he himself produces."

The ideal of just arbitration is that

"men should get something approximating the part of that joint product which they may fairly regard as solely the fruit of their own labor.[2] The basis of the claim that a workman makes is that his presence in a mill causes a certain increase in the output of it." [3]

If these views are generally accepted, the analysis of bargains in a régime of competition will retain its importance. But it may well be doubted whether these views will be generally accepted, even by the thoughtful few, much less by the more numerous of the concerned parties. First, it may be objected that the same principle will give very different results according to the relative numbers of the parties. Put a case which has actually existed, or at least may be well supposed to have existed, in order to test the general application of the principle,—the case in which the number of the employees is not much greater than, say not more than twice as great as, the number of the employers. In such a case, if labor is sold by the hour,—openly, or virtually in a fashion that probably prevails at present,[4]—there would be a determinate equi-

[1] *The Distribution of Wealth*, p. 180.

[2] "Authoritative Arbitration," *Political Science Quarterly*, December, 1892, p. 559.

[3] Ibid., p. 559.

[4] See Marshall, *Principles of Economics*, Book VI. chap. ii. § 2, note to p. 499, 4th edition, referred to above.

librium of the labor market such that each laborer would earn an amount equal to the number of hours worked, multiplied by the final productivity of each hour. That arrangement might appear just, on a certain interpretation of the dictum that one's product " is determined by what a final unit of mere labor can add to the product." But the arrangement would not be just if "the basis of the claim that a workman makes is that his presence in the mill will cause a certain increase in the output of it." All turns on the unit employed. If it is allowable to take the hour as the unit, and find the wage of the individual man by multiplying the number of hours worked by the final productivity of the unit, why should it not be allowable to take a *gang* of men as the unit, and find the wage of the individual man by dividing the number of men in a gang into the final productivity of a gang? Not to rest the argument on supposed cases, take the case of the "capitalist" as he existed in Ricardo's time, or even the modern entrepreneur who is not a salaried manager. If such a one is to be paid on the basis that "his presence in a mill causes a certain increase in the output of it," it is quite possible that he would be justified in claiming a much larger share of the joint product than he now obtains.[1] The assertion that the entrepreneur receives just as much as he adds to product is at best an empirical law,[2] not possessing the sort of universality proper to a general canon of distributive justice. Thus the coincidence of perfect competition with ideal justice is by no means evident to the impartial spectator: much less is it likely

[1] The attribution of a portion of the product to a unit of productive factor is only significant when the unit can be treated as a final increment. *Cp.* Marshall, *Principles of Economics*, note to p. 465, 4th edition. When this condition is not fulfilled,— *e.g.*, Professor Clark's *Distribution of Wealth*, p. 326, where "the amount that is attributable to one-half of the capital" ("the capital that is used in the industry ") is specified,— this doctrine of attribution becomes perilously like the Austrian doctrine of "imputation," as to which see *Economic Journal*, vol. iv. p. 281.

[2] As argued above, p. 181.

to be accepted by the majority of those concerned, whose views must be taken into account by those who would form a theory that has some relation to the facts. One who has closely observed popular movements in America testifies to "the growing belief that mechanical science and invention applied to industry are too closely held by private interests."[1]   "An enormous private ownership of industrial mechanism, especially if coupled with lands and mines," forms the gravamen of the complaints. To advert for a moment to the accessory grievance with the view of understanding the main one, can we suppose that in a case such as Ireland was supposed to constitute before the Gladstonian land legislation, the land leaguers would have been content if they had obtained a perfect market in land, an equation of supply and demand undisturbed by hustling or delay, intimidation or cornering?[2]   This perfection of the market might have served only to bring out the disadvantage at which the many were placed by the vesting of the complete ownership of land in the hands of a few. The prevailing sentiment about the "enormous private ownership of industrial mechanism" may well be similar. It is true that the expediencies governing "judicial rents" are very different from those which are opposed to the legal regulation of wages. But we are now considering how the matter appears to the many, what régime they can be got to accept. It seems not to be competition pure and simple.[3]

Are we, then, to abandon the guidance of competition, and follow a higher, an ethical, standard? Does the theory of distribution require a definition of distributive justice?

[1] Graham Brooks, *The Social Unrest*, p. 122.

[2] Such a market as is analyzed in *Mathematical Psychics*, p. 141.

[3] It is possible that competition purified in the manner suggested below might be accepted by moderate trade-unionists of the type of Applegarth and Dunning, as to whom see *History of Trade-unionism*, S. and B. Webb.

What is justice? The result of Plato's prolonged inquiry
would not be satisfactory to the modern asserter of the
rights of labor. If a new Socrates were to go about in-
quiring, what is the ideally just distribution between the
employing and employed classes? he would probably find
the wisest to be those who confessed their ignorance. As
Jevons says, nothing at first sight can seem more reason-
able and just than the "favorite saying that a man should
have a ,fair day's wages for a fair day's work. . . . But,
when you examine its meaning, you soon find that there
is no real meaning at all. There is no way of deciding
what is a fair day's wages." [1] It has been well observed
that an intuition as to the just rate of wages, the laborer's
share of the total product, involves an intuition as to the
capitalist's share,— a share which depends on the rate of
interest.[2] Can any one seriously pretend that the dictates
of a moral sense are clear and decisive in such a matter?

Let it be remembered also that the path of justice is
not only dark, but dangerous. Striving to secure the
rights of labor, you are very likely to hurt the interests
of labor. The action of trades-unions by lowering inter-
est and harassing employers may result, as pointed out
by Professor Marshall,[3] in checking the accumulation of
capital and the supply of business power. The increase
in personal capital may indeed compensate for this check,
but also it may not. Greater efficiency does not follow
higher wages as the night the day.[4]

In view of these considerations it is doubtful whether
in the near future an influential majority will aim at setting
aside competition. Moreover, even if this consummation
were aimed at, it is not likely to be attained. So invinci-

[1] *Scientific Primer*, chapter on " Wages."

[2] Margaret Benson, *Capital, Labour, and Trade*, chap. xvi.

[3] *Elements of Economics of Industry*, (1892), Book VI. chap. xiii.

[4] See the careful statement of the relations by Mr. Pierson in his *Prin-
ciples of Economics*.

ble in human nature is the "propensity to truck," [1] so true is it that, "when one person is willing to sell a thing at a price which another is willing to pay for it, the two manage to come together in spite of prohibitions of King or Parliament, or of the officials of a Trust or Trades-union." [2] Competition is like the air we breathe, which it is not only dangerous, but difficult to exclude.

Between two guides, of which neither can be followed implicitly, let us walk warily. On the one hand, let us not aim at impossible ideals. But, on the other hand, let us not deserve the criticism which the advocates of trades-unionism have with too much truth directed against "the verdict of the economists" respecting trade-unions.[3] Let us not be as trenchant in act as we have been in thought. That is the moral of a story which was lately told in the newspapers. A gentleman who was under the necessity of using artificial teeth missed those useful adjuncts one morning after breakfast, and was seized with apprehension that he had swallowed them. He accordingly rushed off to an expert and had himself examined by the X-rays. The expert soon located the "matter in the wrong place," and proceeded to operate for its extraction. The operation had already made considerable progress when a relative of the patient rushed in, bringing the lost teeth, which had been found under the carpet. Here is no disparagement intended to the X-rays, that triumph of science. Let us by all means employ the χ and γ of mathematical economics, but let us be cautious in applying our abstract theory to flesh and blood.

To one seeking a representation at once clear and appropriate, the actual conditions of industry present the appearance of a viscous and deliquescent body,[4] not so easy

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[1] Adam Smith, *Wealth of Nations*, Book I. chap. ii.

[2] Professor Marshall, *Quarterly Journal of Economics*, vol. xi. (1897) p. 129.

[3] Sidney and Beatrice Webb, *Industrial Democracy*, Part III. chap. i.

[4] Compare Professor J. B. Clark, *Philosophy of Wealth :* "The present

to be treated by simple formulæ as a perfect liquid or a perfect solid. An adequate theory of Distribution must in these days take some account of the action proper to combinations, effecting collective treaties between employers and employed: competition pure and simple no longer constitutes an adequate hypothesis. Exactly how these two principles are to be conceived as coexistent it is premature to state dogmatically: the economist whose aim is to " teach, not preach," to show what is or will be rather than what ought to be, may well hesitate to pronounce on this question. He can at best invent hypotheses which may facilitate the conception of a compromise between the opposed principles of competition and combination. For example, the required compromise might be attained if it were arranged that the agreement between employers and employed under some heads might be settled by collective treaty between combinations, but under other heads by competitive bargaining between individuals,— as the German students in their duels expose only certain parts, not all parts, of the body to the brunt of the combat.[1] To determine what matters should be the subject of treaty would indeed itself require some sort of treaty.[2] But it would be a kind of treaty for which there is good precedent in laws and institutions. For instance, there might grow up, or be enacted by law, the practice that the hours of labor in a trade should be a matter for collective treaty between a trade-union and a combination of employers, the particular number of hours to be settled by such treaty, while other terms, such as the rate of wages, should be settled by the play of competition.

So far as competition has free play, the received theory

state of industrial society is transitional and chaotic. . . . The consolidation of labor is incomplete," that of capital also (p. 148 and context).

[1] *Cp.* Professor J. B. Clark, *op. cit.*, p. 208: " A spirit of Justice is ever standing over the contestants, and bidding them compete only thus and thus."

[2] " No individual competitor can lay down the rules of combat." Sidney Webb, *Contemporary Review* (1889), p. 869.

of supply and demand, even in its severest mathematical form, would be applicable. Indeed, the severer forms would be peculiarly appropriate in that they do not lend themselves to the contemplation of cornering and other dodges of the market, but assume the "true price"[1] to be worked out honestly. Presumably, the competition which all parties agreed to retain would have to be conducted in a similar spirit. The conditions of the duel, already prescribed, would be further limited by forbidding certain strokes.

A similar regulation may be suggested for the working of an imaginary sort of competition which seems to be contemplated by some who are conversant with the practical problems of industry. Their view appears to be[2] that two combinations might, without resorting to actual competition, agree to accept those terms which would probably result from the play of free competition. In playing this sort of *Kriegspiel*, it might be laid down as a rule of civilized industrial warfare that the workman should not be treated as living from hand to mouth. Suppose him freed from the imminence of starvation for a time at least, and then consider what sort of arrangement of the terms to be settled would constitute a steady flow of the type above described, in which each individual's final sacrifice is normally equivalent to the final utility which he procures thereby.[3] Other rules might be suggested for the working of such imaginary competition.[4]

[1] Condillac's phrase, appropriate to the ideal market above described.

[2] It is difficult to attach any other interpretation to Walker's dicta referred to above. He is presumably supposing that *all* the terms of contract are settled by ideal competition, a limiting case of the régime here suggested that *some* of the terms should be settled by competition, actual or imaginary.

[3] The "method of mutual insurance" practised by trade-unions, according to Mr. and Mrs. Webb (*Industrial Democracy*), seems to confer this sort of advantage on its members.

[4] *E.g.*, in order to estimate that result, it might be thought consonant to the amount of industrial solidarity actually existing not to treat each indi-

But it may be questioned whether the method admits of precision, for a reason urged by Mr. L. L. Price with reference to a proposed principle of arbitration, "that the arbitrator should endeavor to award such wages as would be attained if combination on either side were absent." "Where is the arbitrator to discover this ideal standard?" pertinently asks Mr. Price.[1]

The terms forming the subject of a collective treaty would be settled by a method essentially different from competition. For instance, in the case above proposed, the length of a working day, let there be a law removing this article from the category of terms which are to be settled by the play of competition between individuals. Those who hold that such a law is based on the utilitarian first principle, the greatest happiness of those concerned,—here the citizens who have enacted the law,—will be prepared for the further suggestion that the particular number of hours to be settled will also be regulated by the utilitarian first principle, only that those concerned, whose maximum advantage constitutes the criterion, are not now the citizens,—if the citizens generally have no interest in the particular number of hours in the trade,—but only the parties to the distribution, the members of the contracting combination. That this undergrowth of utilitarianism may, like the parent tree, prove fruitful, has been argued elsewhere.[2] Here it need only be repeated that, when the

vidual workman as an economic atom, but rather to suppose comparatively few independent bodies, each formed by the solidification of many individual atoms. Compare T. J. Dunning, *Trades-unions and Strikes* (a work mentioned by J. S. Mill with approval), p. 21, where reply is made to the question, "Why cannot a man sell his labor for what he likes, as a shopkeeper tickets his goods under the price of those of his neighbor?" "The shopkeepers," replies Dunning, "are not obliged to be always together." "But the matter assumes a very different aspect" in the case of wage-earners who work together. Though, as will presently appear, a preliminary use of the sort of potential competition which has just been described may be required.

[1] *Economic Science and Practice*, p. 198 and context.

[2] *Economic Journal*, vol. vii. p. 552, and *Mathematical Psychics*, p. 53.

utilitarian arrangement is defined as the basis of concilia-
tion between self-interested parties to a contract, it is pre-
supposed that both parties gain by the contract:[1] that it
does not seem to either party to be their interest, rather
than accept such an arrangement, to give up dealing at
all with the other party,—seek, it may be, some third
party, some other employment of their capital and labor,[2]
or at least to defer agreement with the other party, in
view of the probability that they will reduce their terms.[3]

The rationale of conciliation thus presented will doubt-
less not commend itself to many who accept substantially
identical principles invested in a different form. Uniform-
ity is not to be expected in the enunciation of first prin-
ciples. The vital tenet is that each party must take ac-
count of and enter into the wants and motives of the other
party. When competition is no longer umpire, the econ-
omist must abandon—if he ever maintained—the position

[1] Consider the weighty passage referring to the principles on which courts
of arbitration and boards of conciliation should act, in Marshall's *Economics
of Industry* (1879), Book III. chap. viii. § 2: "They must not set up by artificial
means arrangements widely different from those which would have been
naturally brought about," *et seq*. Compare Marshall's Preface to (L. L. Price's)
Industrial Peace, p. xxiii: "The arbitrator is compelled to take some ac-
count of the fighting forces of the two sides; the necessity to be practical
may compel him to go further than he would otherwise have done away from
an absolute standard of fairness."

[2] In the technical terms of *Mathematical Psychics* the *utilitarian
point* in the *contract-curve* must not be outside the points at which that
curve is cut by the *indifference curves*. It is significant that this abstract
representation is adapted to the first rather than the second of the two cases,
in which the utilitarian arrangement would not be accepted,—the case, for
example, in which the capitalist combination refuses the arrangement, be-
cause, considering it as permanently at work, they would be worse off than
if they were to transfer their capital to some other field of enterprise; not the
case in which they defer making an agreement for strategic reasons, because,
being better supplied for a siege, so to speak, than the other party, they hope
to reduce them in case of a strike to submission. Compare what was said
above as to the advisability of not admitting this kind of strategy into indus-
trial combat waged under ideal conditions.

[3] Compare Marshall, *Economics of Industry*, *loc. cit.*: "Mischief almost
always results in the long run from an award which gives to one side terms
much worse than those which it knows it could obtain by a strike or a
lock-out."

of extreme *solipsism* which Jevons in a solitary but re-
markable passage has propounded:—

> Every mind is thus inscrutable to every other mind, and so no
> common denomination of feeling seems to be possible. . . . The
> motive in one mind is weighed only against other motives in the
> same mind, never against the motives in other minds. Each
> person is to other persons a portion of the outward world. . . .
> Hence the weighing of motives must always be confined to the
> bosom of the individual.[1]

Jevons himself has not remained consistently on this
pinnacle of solitude. It is abandoned by economists in
general in the received theory of taxation, founded, as
Mill says, on " human wants and feelings." [2] Self-regard-
ing self-interest, the gospel of Adam Smith, is not alone
sufficient for industrial salvation: a leaf must be taken
from his older and less familiar testament, of which the
cardinal doctrine was *sympathy*. Sympathy does not neces-
sarily imply sentimental attachment: sympathy, accord-
ing to Adam Smith, is the basis of a not very sociable
emotion,—ambition. A distinguished psychologist has not
hesitated to pronounce "sympathy compatible with dis-
like." [3] It is, then, no counsel of perfection to cultivate
sympathy, in the sense of mutual understanding, between
the parties to distribution. No Utopian eradication of
self-love is contemplated. It may be hoped, indeed, that
through the practice of conciliation, in the course of gen-
erations, the dispositions of which the gratification consti-
tutes self-interest may become more social, so that, for
instance, an advantage founded on the extreme privation
of others would not appear desirable to the capitalist em-
ployer of the future. But such "moralization" of the
saving classes, though it may be expected, need not be

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[1] *Theory of Political Economy*, edition 3, p. 14.

[2] *Political Economy*, Book V. chap. ii. § 4.

[3] Bain, *Emotion and Will* (Table of Contents).

postulated for the working of conciliation. Intellectual sympathy alone might effect much. The arts[1] by which the sympathetic imagination may be cultivated form a supremely important topic, but one which hardly falls under the *theory of Distribution*.

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[1] For example, co-operation, as many economists have pointed out, would have among its good effects enabling workmen to realize the position of employers. Again, the training of future business men in economics at the universities, as Professor Marshall has lately urged, would tend to develop the sympathetic use of the imagination. "It has been found," he says, "by experience in England and in America that the young man who has studied both sides of labor questions in the frank and impartial atmosphere of a great university is often able to throw himself into the point of view of the workingman and to act as interpreter between them and persons of his own class with larger experience than his own." See his address on "Economic Teaching at the Universities," published in the review of the Charity Organization Society, January, 1903, noticed in the *Economic Journal*, vol. xiii. p. 155, and his *Plea* for the creation of a curriculum in economics (addressed to the Cambridge Senate), noticed in the *Economic Journal*. vol. xii. p. 289.

Compare the expressions in the *Report of the Anthracite Coal Commission*, U.S.A. (1903), on the importance of "a more conciliatory disposition in the operators and their employees."